REMARKS

Claims 1-20 were pending in the above-identified application when examined and are amended as indicated above. In this response to the Office Action dated January 29, 2007, claims 1-12 and 17-20 are amended to improve their form, claims 13-16 are canceled, and claims 21-26 are added.

Claims 1-20 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 1-12 and 17-20 have all been amended to recite a computer program product and are therefore statutory subject matter under 35 U.S.C. § 101. Claims 13-16 are canceled. In view of these, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 101.

Claims 1-10 and 14-20 were rejected under 35 U.S.C. § 102(b) as anticipated by S.A. Savari, "Renewal Theory and Source Coding," Proceedings of the IEEE 88(11), pp 1692-1702, (2000) herein after Savari. Claims 14-16 are canceled. Applicant respectfully traverses the rejection of claims 1-10 and 17-20.

Independent claim 1 distinguishes over Savari at least by reciting, "outputting the substrings in a random order to generate an output sequence simulating the input sequence."

Savari is directed to source coding and particularly describes how renewal theory can be applied to optimize source coding. Savari fails to disclose or suggest the problem of or need for simulating a sequence.

Savari particularly fails to suggest outputting substrings in a random order to generate an output sequence. In regard to this element, paragraph 3 in the right column on page 1695 in Savari is cited on page 4 of the Office Action. The cited paragraph is directed to data compression algorithms and particularly universal source codes. Beginning in the third line of the cited paragraph, Savari states, "One way to assess the performance of a universal source code is to study how well it compresses a random output from a known probabilistic source." Savari is referring to a random source of input data for the coding process but does not suggest outputting substrings in a random order to generate an output sequence. Savari then refers to specific universal source coding algorithms, and beginning in the 14th line of the cited paragraph, Savari states, "The encoder for each of these algorithms parses the source output into a concatenation of phrases and uses the binary code symbols to construct a uniquely decipherable representation of the phrases." Savari thus describes assigning codes to phases or

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substrings parsed from a sequence being encoded, but Savari does not suggest "outputting the substrings in a random order." Instead, Savari describes outputting codes and is silent regarding the order of such codes, although sequential order is conventional for coding.

In accordance with an aspect of the present invention, an original sequence can be simulated to generate additional data that can be used as described in Applicant's specification for texturing of objects in generated images or for testing of systems when the original sequence does not provide a sufficient quantity of data for the desired tests. For such purposes, the simulated sequence preferably differs from the original sequence but has statistical characteristic similar to the original sequence. Savari is directed to different problems associated with lossless encoding or compression, and because Savari is directed to different problems, Savari fails to suggest randomness in an output signal or sequence relative to an input signal or sequence.

For the above reasons, independent claim 1 is patentable over Savari.

Claims 2-10 depend from claim 1 and are patentable over Savari for at least the same reasons that claim 1 is patentable over Savari.

Independent claim 17 distinguishes over Savari at least by reciting, "(c) in response to the current node being unused, outputting a substring corresponding to the current node as part of the simulated sequence, designating the current node as being used, and setting the current node equal to the root node; (d) in response to current node being used, selecting a branch from the current node to one of the nodes in a higher level of the tree structure and setting the current node to the node at an upper end of the selected branch."

As noted above, Savari discloses coding or compression of input sequences and fails to disclose generating a simulate sequence. Savari particularly fails to disclose "outputting a substring corresponding to the current node as part of the simulated sequence," as recited in claim 17.

In the rejection of claim 17, on page 10 of the Office Action, the Examiner cited Savari, page 1698, left column, paragraphs 1 and 2. The cited paragraphs of Savari describe generation of dictionaries and more particularly disclose a technique using a tree structure for generation of a uniquely parsable dictionary. Such dictionaries identify the codes respectively corresponding to substrings. During encoding, a dictionary of this type can be used to identify codes that respectively replace substrings, and during decoding, the dictionary can be used to identify substrings that respectively replace the codes.

Savari nowhere discloses or suggests "in response to the current node being unused, outputting a substring corresponding to the current node ..., designating the current node as being used, and setting the current node equal to the root node." In

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particular, during encoding, codes (not substrings) are output. During decoding, when substrings are output, Savari fails to suggest using the concept of used or unused nodes. In particular, a decoding process can decode each code any number of times and the concept of used or unused nodes is irrelevant.

Independent claim 17 is thus patentable over Savari.

Claims 18-20 depend from claim 17 and are patentable over Savari for at least the same reasons that claim 17 is patentable over Savari.

For the above reasons, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 102.

Claim 11 was rejected under 35 U.S.C. § 103(a) as unpatentable over Savari in view of F. Sakarya, D. Wei, and S. Emek, "An Evaluation of SAR Image Compression Techniques," 1997 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'97) - Volume 4 p. 2833, hereinafter Sakarya. Applicant respectfully traverses the rejection.

Claim 11 depends from claim 1, which is patentable for at least the reasons given above. Sakarya is directed to evaluation of image compression techniques and is cited in the Office Action for disclosing application of compression to images. However, the combination of Savari and Sakarya is still directed to encoding or compression, not generating a simulated sequence. Accordingly, the above reasoning showing that claim 1 is patentable over Savari also applies to the combination of Savari and Sakarya, and therefore claims 1 and 11 are patentable over the combination of Savari and Sakarya.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) as unpatentable over Savari in view of El-Maleh et al., "A Geometric Primitives Based Compression Scheme for Testing Systems on a Chip," IEEE (2001), herein after El-Maleh. Claim 13 is canceled. Applicant respectfully traverses the rejection of claim 12.

Claim 12 depends from claim 1, which is patentable over Savari for at least the reasons given above. El-Maleh is directed to methods for compressing test data used, for example, in built-in self-tests in integrated circuits, and El-Maleh is cited in the Office Action for disclosing the combination of on-chip testing and compression. However, the combination of Savari and El-Maleh as suggested by the Examiner is still directed to encoding or compression, not generating a simulated sequence. Accordingly, the above

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reasons that claim 1 is patentable over Savari also apply to the combination of Savari and El-Maleh, and claims 1 and 12 are patentable over the combination of Savari and El-Maleh.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 21-26 are added.

New independent claim 21 is patentable at least for reciting, "partitioning the input sequence into a partition including a set of substrings and a tail, wherein the substrings have lengths that are not all equal; outputting the substrings in a random order to generate an output sequence; and using the output sequence to create color variations of a texture of a second object that is in a second image." New claims 22 and 23 depend from claim 21 and are patentable for at least the same reasons that claim 21 is patentable.

New independent claim 24 is patentable at least for reciting, "partitioning the input sequence into a partition including a set of substrings..., wherein the substrings have lengths that are not all equal; randomly ordering the substrings into an output sequence; and testing a second system using a second signal that is derived from the output sequence, the second signal simulating the first signal." New claims 25 and 26 depend from claim 24 and are patentable for at least the same reasons that claim 24 is patentable.

For the above reasons, Applicant respectfully requests allowance of the application including claims 1-12 and 17-26.

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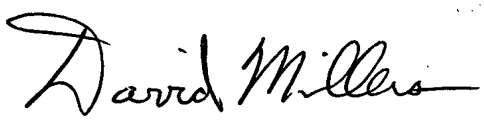

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